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A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

New revised version of "Selling to the USAEC" is now available at 25¢ from Superintendent of Documents, Wash. 25, D.C. The guide which replaces version of January 1956, lists products bought by the Commission; contractors active on its projects; etc. (Other BOOKS, PUBLICATIONS, p. 4 this LETTER.)

Now representing Radiation Counter Laboratories, Inc. of Skokie, Ill., in northeastern states is M. J. Seavy & Co., 30 Church St., New York. Seavy will handle sales of RCL's nuclear instrumentation and data processing equipment in the states of New York, New Jersey and eastern Pennsylvania. (Other MANUFACTURERS' NEWS, p. 3 this LETTER.)

Gains in sales and earnings have now been reported by High Voltage Engineering Corp., Burlington, Mass., for first half of the firm's fiscal 1958 year. Gross sales were $2,934,212 compared with $2,105,087 for the like 1957 period, with net earnings $206,091 versus $147,142. Per share earnings were 54¢ for the 1958 six months compared with 40¢ for the year earlier period and 89¢ for all of 1957. Company's backlog was $5,317,321 on June 30, 1958. (High Voltage, manufacturer of particle accelerators for industrial, scientific and other purposes, had acquired Electronized Chemicals Corp. at the end of 1957, and had an additional profit of $29,400 from that operation.) (Other FINANCIAL NEWS, p. 2 this LETTER.)

Decision has been made by U.K. Atomic Energy Authority to abandon the first plutonium pile at Windscale, where operational accident had caused damage so severe that repairs would be uneconomic. Materials and equipment that are useable will be removed, with some buildings adapted to other uses and the remainder sealed off. Future of pile No. 2 has not yet been decided. (Other NEWS FROM ABROAD, p. 3 this LETTER.)

Renewal of USAEC contract for biological research at Iowa State College, with $117,000 granted for one year work there on effects of exposure of animals to ionizing radiation, was largest award among group of some forty-five non-secret research contracts recently issued by the USAEC. Other renewals included continuation of American Meat Institute Foundation's contract to study the relation of vitamin B-12 to metabolism of nucleic acid, with one year grant of $7,500, and continuation of Yerkes Laboratories of Primate Biology, Inc.'s contract to study behavioral effects of ionizing radiation on chimpanzees of various ages, with one year grant of $4,607. (Other CONTRACTS AWARDED, BIDS ASKED, p. 5 this LETTER.)

Five of the eight employees of the Y-12 plant at Oak Ridge who were involved last month in the most serious radiation accident ever to occur there have been released from the medical division hospital of Oak Ridge Institute of Nuclear Studies. Three had previously been released. Laboratory studies indicate that all men are showing signs of recovery from the dosage they received which ranged from a high of approximately 320 rad to a low of 30 rad. The accident occurred when a Y-12 employee emptied a container of enriched uranium solution into a larger drum, inadvertently causing a criticality reaction.

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ATOMIC ENERGY BUSINESS NEWS...

NEW PLANT IN OPERATION:- New integrated plant for the fabrication of beryllium metal has now been put into operation at Hazleton, Pa., by The Beryllium Corp. The company recently completed the facility adjacent to its large reconstructed plant where it produces beryllium metal. While the bulk of the new fabrication unit's output will be directed toward the nuclear market, it will also produce experimental shapes for aircraft research and development. Fabrication of the beryllium is a powder metallurgy process by which vacuum cast billets are chipped, attritioned into powder, hot pressed under vacuum into shapes, and later machined to various contours. In addition to supplying its fabrication unit, the company will offer these hot-pressed shapes to other companies interested in fabrication and to machine shops which specialize in the precision machining of beryllium metal.

LOW COST URANIUM EXTRACTION PROCESS REPORTED:- New and simplified method of extracting uranium ore is said to have been developed by Spain's Junta de Energia Nuclear (Spanish Nuclear Board). As evolved by board specialists, the new process is said to effect a 35% saving over current extraction processes. Techniques include direct fluorination, as well as an autoreduction process not requiring hydrogen. Patent applications have been made by the board in several countries, according to which ammonium bifluoride is used as a reagent in the autoreduction process. (It is expected that an agreement will be signed by the board shortly with the Germany company, Degussa, for exploitation of the patent.)

CONSTRUCTION PERMITS & LICENSES ISSUED:- National Advisory Committee for Aeronautics has received USAEC permit for construction of research and testing nuclear reactor at the Plum Brook Ordnance Works, near Sandusky, Ohio. Issuance followed extensive Commission hearings in late 1957 and early 1958 when the safety of locating the reactor in an area of high population density was questioned. The 60 megawatt (thermal) reactor with estimated cost of $10,735,000 will be used by NACA to develop reactors suitable for aircraft propulsion. Scheduled completion date is January, 1960, for the reactor which will be of the light water cooled and moderated type. It will be located in a vertical, cylindrical stainless steel clad pressure tank, nine feet in diameter and 32-ft. high.

Construction permit has been issued Aerojet-General Nucleonics, San Ramon, Calif., by USAEC, for construction of 10 of the firm's AGN-211 nuclear research reactors. These are Aerojet's 15 watt (thermal) semiportable reactors, with plastic cores. They will be of the pool type, using uranium enriched to 20% in uranium-235 as fuel.

License is being issued by USAEC to American Mail Lines, Ltd., Seattle, Wash., allowing the company to receive and dispose of byproduct materials (radioisotopes) and source materials (uranium and thorium) "packaged" by Boeing Airplane Co., Seattle. American Mail intends to transport the materials in an isolated section of its regular ships and dispose of them at least 150 miles off the continental shelf in a minimum depth of 1,000 fathoms. The work will be done during regular commercial voyages, and not more than 10 curies of byproduct material or 15-lbs. of source material will be carried on one ship. (Four other companies currently are licensed by the USAEC to dispose of radioactive material at sea: Isotopes Specialties Co., Inc., Burbank, Calif.; Crossroads Marine Disposal and Salvage Co., Boston, Mass.; Reed-Curtis Nuclear Industries, Culver City, Calif.; and Nuclear Engineering Co., San Francisco, Calif.)

ATOMIC ENERGY FINANCIAL NEWS...

CANADIAN URANIUM PRODUCER SHOWS GOOD EARNINGS:- Operating profit of over $2 million has been shown by Bicroft Uranium Mines for the first half of 1958. The company's Bancroft area mine and mill has shown an operating profit estimated at $2,007,918 from production valued at $4,640,262 for six months ended June 30, 1958. This is after all operating charges, including interest on debentures, but before any write-offs for depreciation or pre-production expenses. Latest production figures show that June's output grossed $811,287 from some 40,374 tons milled.

STOCKHOLDING CHANGES SHOWN:- Changes in large stockholdings at Northspan Uranium Mines, Ltd., included sale by Paul Westerfield, director, of 2,000 shares. Mr. Westerfield's holdings were 27,200 shares after the sale.

FINANCIAL ANALYSES AVAILABLE:- An analysis of current situation and prospects of Western Nuclear Corp. has been prepared by Bosworth, Sullivan & Co., Denver, Colo. It may be obtained from the firm on request.

ATOMIC ENERGY PATENT DIGEST...

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NEW PRODUCTS, PROCESSES, INSTRUMENTS...for nuclear lab & plant...

NEW PRODUCTS FROM MANUFACTURERS:- Electrometer, Model E-100, has suggested use in measuring neutron flux, using boron ion chambers in conjunction with photomultiplier tubes. The instrument is said by the manufacturer to be the lowest cost electrometer in its performance class. --Gyra Electronics Corp., 518 N. Spring Ave. La Grange Park, Ill.

Portable gamma intensity recorder uses transistors in its circuitry. The instrument records on magnetic tape the time and intensity of gamma radiation to which it is exposed. --Land-Air, Inc., 7444 W. Wilson Ave., Chicago 31, Ill.

Multichannel scintillation spectrometer has 120 channels taken 20 at a time for rapid analyses of pulse height distributions. It is said to offer a stable, non-overloading scintillation spectrometry system by inclusion of a super stable high voltage supply and a non-overloading linear amplifier. --Baird-Atomic, Inc., 33 University Rd., Cambridge 38, Mass.

PRODUCTS UNDER DEVELOPMENT:- A pocket size "blast meter", said to be capable of establishing nuclear weapon yield automatically, has been developed by Howard Sander, engineer with Sandia Corp., the Western Electric weapons engineering subsidiary. At time of detonation the meter sounds a warning tone, and detects and measures nuclear explosions. The blast yield is said to be shown in kilotons or megatons directly on the instrument's dial without need for calculations or knowledge of distance from the burst.

MANUFACTURERS' NEWS:- New contracts totaling over $1½ million have been received in the last four weeks by Tracerlab, Inc., Waltham, Mass. nuclear product and servicing firm. The new contracts are for research and services and represent a wide range of government business. Agencies letting some of the contracts are the USAEC, U. S. Air Force, Diamond Ordnance Fuse Laboratories, and U. S. Army's corps of engineers.

Construction of a new wing which will increase its plant working space some 40% has been started by Radiation Counter Laboratories, Skokie, Ill. The 5400 square foot addition is scheduled for completion by mid-September at an estimated cost of $45,000.00. This will be the second addition RCL has made this past year. The first addition, completed in January, 1958, more than doubled the size of the original plant, increasing it from 6400 to 13,200 square feet. The firm, with some 80 employees, is operating at a current gross annual volume of approximately $1,750,000.

EQUIPMENT EXPORTED UNDER USAEC GRANTS:- Grant of $36,000 has been made by the USAEC to Uruguay for nuclear energy equipment being fabricated by U.S. firms. The equipment, comprising a bio-chemical laboratory, a medical diagnostic laboratory, and a cobalt-60 teletherapy laboratory will be installed at Uruguay's University of the Republic, Montevideo. Mutual Security Program funds will be used to transfer the grant.

Nuclear engineering laboratory will be set up at the new nuclear center near Athens, Greece, under a grant of approximately $127,000 made by the USAEC to the Greek Atomic Energy Commission, using Mutual Security Program funds. Main feature of the laboratory will be a subcritical assembly, including a stainless steel tank, complete lattice assembly, source holder and handling tools, base leveling mechanism, and supporting structures. In addition to the subcritical unit (with 2500 kg of canned natural uranium slugs as fuel) the equipment grant includes a 250 mg radium-beryllium neutron and gamma ray source, neutron and gamma ray counting units, flux mapping equipment, and auxiliary equipment. About $100,000 of the grant is for the subcritical assembly's fuel. All items in the grant will come from U.S. firms. (AMF Atomics is now building Greece's first research reactor at this nuclear center.)

Gamma irradiation unit equipped with a cobalt-60 radiation source has been delivered by the USAEC to Italy's Comitato Nazionale per le Ricerche Nucleari for use by the Botanical Institute of the University of Pisa. The gamma source will be used for long term research on the effects of radiation on agricultural crops; fabricated by the USAEC, it is estimated to have cost $5,500. Mutual Security Programs funds in that amount will be transferred to the Commission in reimbursement.

Grant of $350,000 has been made by the USAEC to the government of W. Germany toward cost of the nuclear research reactor constructed for the Technical University of Munich. The reactor, a one-megawatt light water cooled and moderated pool-type facility, went into operation October, 1957. AMF Atomics designed and constructed the reactor and also acted as agent in procuring fuel elements fabricated by Babcock & Wilcox, Lynchburg, Va. Total cost of the reactor project, including associated laboratories, buildings, etc., is about $3,000,000.

ATOMIC ENERGY CONTRACT NEWS...

Colo. It may be obtained from the firm on request.

ATOMIC ENERGY PATENT DIGEST...

ISSUED July 22, 1958 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Manufacture of radiation detectors and the like. Roy P. Mazzagatti, inventor. No. 2,844,707 assigned to USAEC.

ISSUED July 22, 1958 to GOVERNMENTAL ORGANIZATIONS:- (1) Apparatus for generating electricity from a source of heat. K. C. Jordan, inventor. No. 2,844,639 assigned to USAEC. (2) Multiple spark gap switch. A. E. Schofield, inventor. No. 2,844,740 assigned to USAEC. (3) Method of testing for leaks. E. C. Creutz, W. A. McAdams, inventors. No. 2,844,735 assigned to USAEC. (4) Analogue computer for radiation intensity dosage problems. J. M. McCampbell, inventor. No. 2,844,312 assigned to Secretary of the Navy.

ISSUED July 29, 1958 to GOVERNMENTAL ORGANIZATIONS:- (1) Pulse sorter. E. J. Wade, inventor. No. 2,845,530 assigned to USAEC. (2) Neutron measuring method and apparatus. Glenn T. Seaborg, Gerhart Friedlander, John W. Gofman, inventors. No. 2,845,544 assigned to USAEC. (3) Neutron counter. C. D. Curtis, R. L. Carlson, M. P. Tubinis, inventors. No. 2,845,560 assigned to USAEC. (4) Peak reading voltmeter. A. L. Dyer, inventor. No. 2,845,596 assigned to USAEC.

NEW BOOKS & OTHER PUBLICATIONS...

Standard Instrumentation Techniques for Nuclear Environmental Testing, by W. R. Burrus, Wright Air Development Center. Recommendations of aircraft nuclear propulsion advisory committee. 53 pages. No. PB-131590. ($1.00) ..... Radiation Protection of Barracks & Underground Shelters, by C. W. Malich, L. A. Becah, Naval Research Labortory. Shielding properties of standard Navy enlisted men's barracks and underground shelters. 48 pages. No. PB-131279. ($1.25) ..... Naval Research Reactor: Part IV, by M. P. Young, G. F. Wall, Naval Research Laboratory. Detailed description of the control system of the NRL research reactor. 144 pages. No. PB-121879. ($2.75) .....Gamma Radiation Stability of OS-45 and OS-45-1 Hydraulic Fluids, by W. L. R. Rice, Wright Air Development Center. Investigations on use of hydraulic fluids when exposed to gamma radiation. 47 pages. No. PB-131661. ($1.25) .....Effects of Nuclear Radiation on Military Specification Paints, by L. A. Horrocks, Wright Air Development Center. 31 pages. No. PB-131599. ($1.00) ..... Design and Use of a 23,000 Curie Cobalt-60 Facility, by M. C. Atkins, K. Wolfsberg, W. N. Lorentz, D. R. Smith, Wright Air Development Center. 103 pages. No. PB-131619. ($2.50) --Above from: Office of Technical Services, Wash. 25, D. C.

Nuclear Scattering, by K. B. Mather, P. Swan. Fundamentals of nuclear scattering; of interest to both practical and theoretical nuclear physicists. 469 pages. -- Cambridge University Press, 32 E. 57th St., New York 22, N.Y. ($14.50)

Catalogue on Courses on Nuclear Energy. New edition (1958-59) showing courses in subjects relating to nuclear energy in Western European universities, technical high schools and research centers. 115 pages. --O.E.E.C., 2, rue Andre-Pascal, Paris, France.

MEETINGS, COURSES, CONFERENCES...

COURSES:- Four courses in radiological health will be offered starting November, 1958, by New York University-Bellevue Medical Center post-graduate medical schools. They are intended for persons already trained in one of the physical, engineering, biological or medical sciences, who desire an introduction to techniques and methods associated with radiological hazard evaluation.

An eight week institute now underway at Argonne National Laboratory, Lemont, Ill., has some twenty-nine university and college professors and instructors enrolled. Sponsored by the American Society for Engineering Education, the institute is supported by the USAEC and conducted by Purdue University, and Argonne.

CONFERENCES:- World Power Conference, scheduled for September, 1958, in Montreal, Canada, will discuss some 150 papers dealing with production, transportation, and use of energy in all its aspects. Nuclear energy will be covered, as well as uranium mining; the latter, among some 15 papers dealing with the mining industry.

MEETINGS:- Displays from 21 governments will be shown at the Palais des Expositions in Geneva accompanying the U.N.'s Second Conference on Peaceful Uses of Atomic Energy, with several showing uranium in various stages of recovery and preparation as nuclear fuel. France will show separations of uranium-235 from uranium-238; Italy, model of uranium fuel plant; Norway, model of pilot plant for chemical processing of nuclear fuel; Sweden, production of uranium and fuel elements.

laboratories, buildings, etc., is about $3,000,000.

ATOMIC ENERGY CONTRACT NEWS...

BIDS ASKED:- Bids have been asked by the USAEC's New York City operations office (70 Columbus Ave.) for construction of transmission line, substation and distribution facilities in connection with Project Matterhorn (controlled thermonuclear reactions) at Princeton, N.J. The bids are returnable Aug. 15.

CONTRACTS AWARDED:- Contract in excess of $385,000 has been awarded The Martin Co., Baltimore, by the Navy Department, to extend engineering studies on a nuclear seaplane project. The program will cover powerplant requirements involved in modification of existing airframes; studies of new airframe designs based on present engine developments; and other areas in which nuclear propulsion could be applied to Navy weapons systems. The studies will also cover facilities and handling requirements; operation analysis; and nuclear reactor shielding techniques. (The Martin contract is part of the U.S. Navy's aircraft nuclear propulsion program which initially will make use of an existing British seaplane as a test aircraft. Meanwhile at the Navy's aeronautical materials laboratory, Philadelphia, research is under way to develop light weight materials which can withstand the heat and radiation of an aircraft nuclear reactor.)

Contract has been awarded Curtiss-Wright Corp., Wood-Ridge, N.J., by USAEC, to develop, design, construct and test operate the gamma irradiation facility which will be part of the U.S. Army's ionizing radiation center at Lathrop, Calif. C-W will use as source of the radiation about two million curies of cobalt-60 to be produced at the Savannah River Plant and supplied by the USAEC. With the exception of this cobalt-60, the cost of the project is estimated at $1,605,000 including a fee of $80,000 to Curtiss-Wright. (As planned by C-W people, several thousand strips of radioactive cobalt will be assembled into two radiation plaques. These will be installed in a temperature-controlled irradiation chamber, with a conveyor system to permit continuous operation. The plaques will be lowered into a water-filled canal in the chamber floor when it is necessary for operating personnel to enter the chamber. The cobalt facility will be one of the two radiation sources in the center. The other source will be an electron linear accelerator now being built for the Army by Varian Associates, Palo Alto, Calif.)

General contract for construction of the nuclear and ore laboratories of Union Carbide Nuclear Company, division of Union Carbide Corp., has been awarded Joseph L. Muscarelle, Inc., Maywood, N.J. Site is a 100 acre tract in Sterling Forest, near Tuxedo, N.Y. In addition to Union Carbide Nuclear Co., the facilities will be used by Union Carbide Ore Co., and Union Carbide Research Institute.

Contract in amount of $100,000 has been received by The Fluor Corp., Whittier, Calif., to make a feasibility study of a nuclear-powered sea water conversion plant. The project is financed jointly by Office of Saline Water, U.S. Dep't. of the Interior ($60,000.00 grant) and Water Authority of State of California ($40,000.00 grant). Whether such a project producing 10 to 20 million gallons of fresh water per day can be made economic by selling steam-generated electricity as a by-product is an objective of the study. Water distillation plant with cost of upward of $60 million, used in connection with a nuclear reactor, will be Fluor's approach to the problem.

Contract is being negotiated by Maritime Administration and the USAEC with States Marine Lines under proposal made by the latter to the Commission to be general operating agent for the nuclear powered passenger-cargo ship the NS Savannah. States Marine Lines was one of seven lines which replied to the invitation of the USAEC-Maritime Administration to operate the Savannah made in March, 1958. (Keel of the NS Savannah was laid May 22, 1958 with launching scheduled for 1959. The ship will be 595½-ft. long, with 78-ft. beam and will be able to carry more than 60 passengers and 9,500 tons of cargo at a speed of 20½ knots. Its propulsion plant will include a pressurized water reactor of advanced design capable of operating over three years on its initial fuel loading. Total cost of the ship and reactor will be about $31 million.) Under its contract, States Marine Lines is to operate the ship for the government during its initial trials and tests, and also in modified commercial service for operational evaluation purposes. A new agreement will be established when the ship is ready to go into regular operation in passenger-cargo service.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

August 5, 1958